

## A NEW "VIORNA" *CLEMATIS* FROM NORTHERN ALABAMA

In 1983, while examining specimens from the Huntsville, Alabama, area donated to VDB by the collector, Mr. James D. Morefield, I was particularly interested in a distinctive "Viorna" that he had collected previously from the lower western slopes of Round Top Mountain (summit elevation ca. 1,600 feet). This mountain is a distinctive westward lobe of Huntsville Mountain and is south-southwest of Monte Sano Mountain in the same trend, the whole massif a part of the Cumberland Plateau. The *Viornae* subsection of *Clematis* is distinguished primarily by the thickened, bevelled-edged sepals which in the live flower form (usually) an urceolate design, the flowers themselves being arranged singly or in few-flowered cymes in leaf axils with the primary peduncle short to elongated but always having leafy bracts. The subsection is confined to North America and centers in the southeastern United States; it is notable for its narrow endemics.

I visited the locality and, thanks to the accuracy of Morefield's label information, was able to locate the population quickly and to find an abundance of plants in flower and early fruit. Further exploration on the same mountain trend resulted in discovery of yet another thriving population of this new *Clematis*. Named in honor of its perceptive first collector, it is described as follows:

***Clematis morefieldii* Kral, sp. nov.** TYPE: United States. Alabama: Madison Co., SE Huntsville, along upslope side of eastward unpaved extension of Deborah Avenue, 0.65 mi. SSW of Round Top Mtn., limerocky face of slope, clay soil, in *Cotinus-Quercus*. Vines 2–5 m, sprawling on boulders or shrubs and forest reproduction; calyx greenish with rose tints, 17 June 1983, *R. Kral 70176* (fruiting material from same locality, 27 June 1986, *R. Kral* with *J. R. Carter 73540*) (holotype, MO; isotypes, ALU, AUA, BM, CM, DOV, DUR, EKY, F, FLAS, FSU, GA, GH, ILL, ISC, K, LAF, MICH, MISSA, MO, NCU, NY, OS, PAC, RSA, SMU, TENN, TEX, UC, US, VDB, VSC, WAT, WILLI). Figures 1, 2.

Planta perennis, scandens, usque ad 5 m longa, cirrhos efferens. Caules valde flexuosi, subteretes, 2–3 mm crassi, valde costati, rufobrunnei, parce vel copiose albopilosi vel pilosi vel araneosi. Foliola principalia re-

mota, expansa, imparipinnata, usque ad 2 dm longa, rhachidi breviter pilosa vel villosa, flexuosa; foliola binatim, 9–11, expansa, ad apicem rhachidis gradatim redacta, superiora cirrhosa, inferiora anguste vel late ovata, 5–10 cm longa, acuta vel acuminata, brevimucronata, tenuia, integra vel bi- vel-triloba, petiolulis pilosis, 4–15 mm longis; pagina superior glabra flavovirens; pagina inferior sericea aut pilosa. Flores axillares, solitaires aut pauci in cyma dispositi sessiles, pedunculis ad anthesin dense albopilosis, erectis vel expansis, 15–25 mm longis, ad basim bibracteolis. Sepala oblongo-lanceolata, 20–25 mm longa, acuminata, ad apicem margine anguste albomarginato, erecta tum ad apicem leviter expansa vel breviter reflexa, dorsaliter albosericea, subrosea aut pallide viridia et rubentia, margine incrassata, albotomentulosa, ventraliter glabra, inconspicue paucinervosa. Stamina linearia, 12–20 mm longa, filamentis compressis, supra medium pilosis, antheris cum apiculo 3.0–3.5 mm longis, pilosis. Achenium rhomboideo-ovatum, ca. 7–9 mm longum, acuminatum, compressum, sericeum, margine incrassato, stylo 30–35 mm longo, brunneoplumoso.

Perennial scandent vine to 5 m long. Stems flexuous, copiously villous and/or arachnoid with white hairs. Principal leaves imparipinnate, to 2 dm long, spreading, the rachis base shorter than the lowest leaflets, the rachis axis flexuous, pilosulous or villous; leaflets paired, 9–11, spreading or erect, reduced distally on rachis, the upper 1–3 forming tendrils, the lowest broadly to narrowly ovate, 5–10 cm long, acute to acuminate, mucronulate, thin, entire to 2- or 3-lobate, on pilose petiolules 4–15 mm long; upper surface smooth, yellow-green; lower surface sericeous or pilose. Flowers axillary, solitary or (more often) 1–3(–5) in sessile cymes, the peduncles at anthesis densely white-villous, erect or spreading, 15–25 mm long, with 2 bracteoles at base. Sepals oblong-lanceolate, 20–25 mm long, erect, the tips acuminate, with narrow white borders, slightly spreading to short-reflexed, the backs pink or pale green-and-red, albosericeous, the edges thick, white-tomentulose, the inner surface smooth, longitudinally inconspicuously few-nerved. Stamens linear, 12–20 mm long, the filaments flattened, pilose from middle to apex, the anthers including apiculus 3–3.5 mm long, pilose. Fruit body rhomboidal-ovate, 7–9 mm long, acuminate, compressed, marginally thickened, sericeous, the style 30–35 mm long, with a brown, plumose coma.

*Additional specimens examined.* UNITED STATES. ALABAMA: Madison Co., SE Huntsville, along upslope

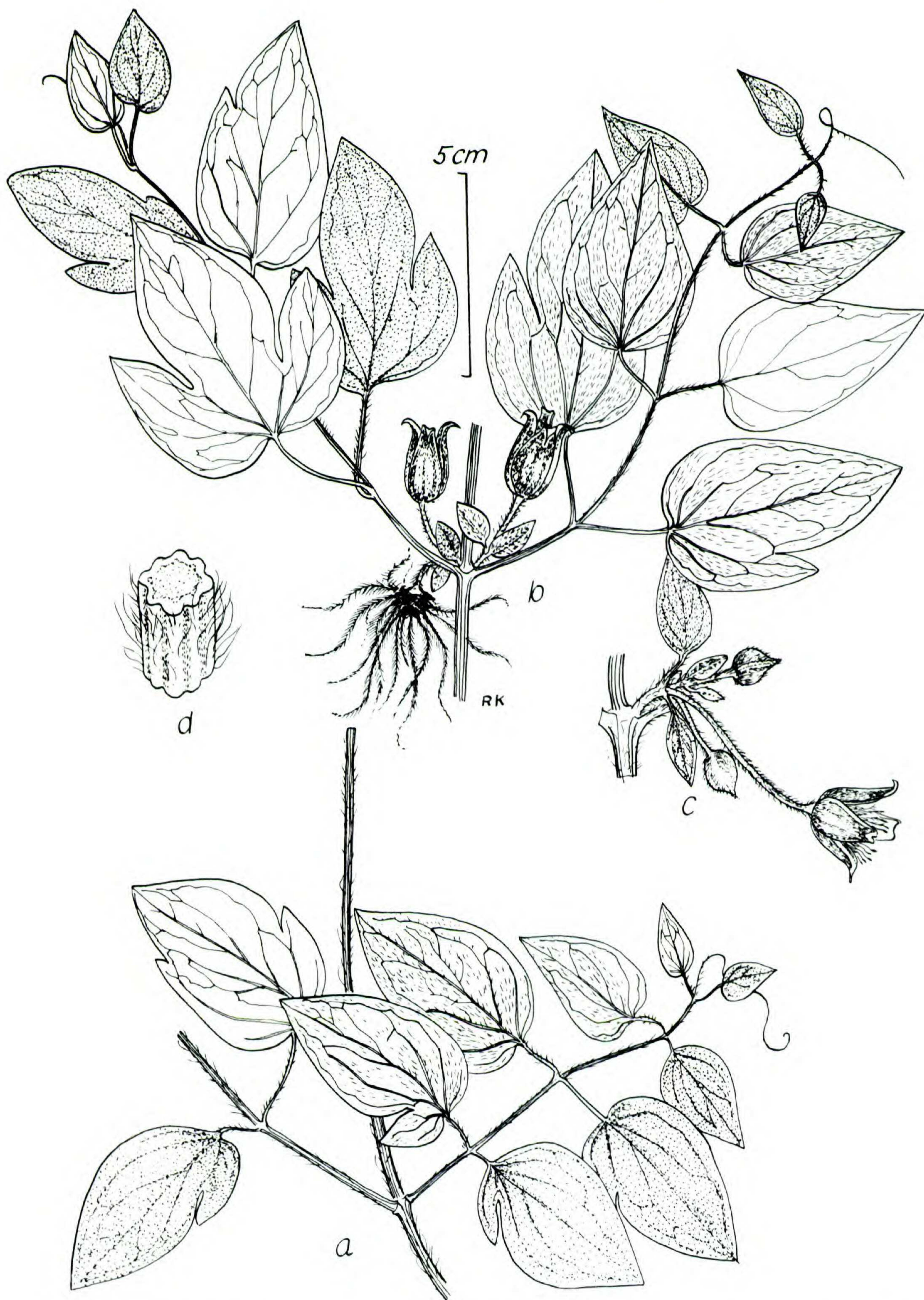


FIGURE 1. *Clematis morefieldii*. —a. Habit sketch, lower node. —b. Sketch of node from mid-vine. —c. Flowering node, largest leaves removed. —d. Sector of mid-stem. (Drawn from Kral 70176.)

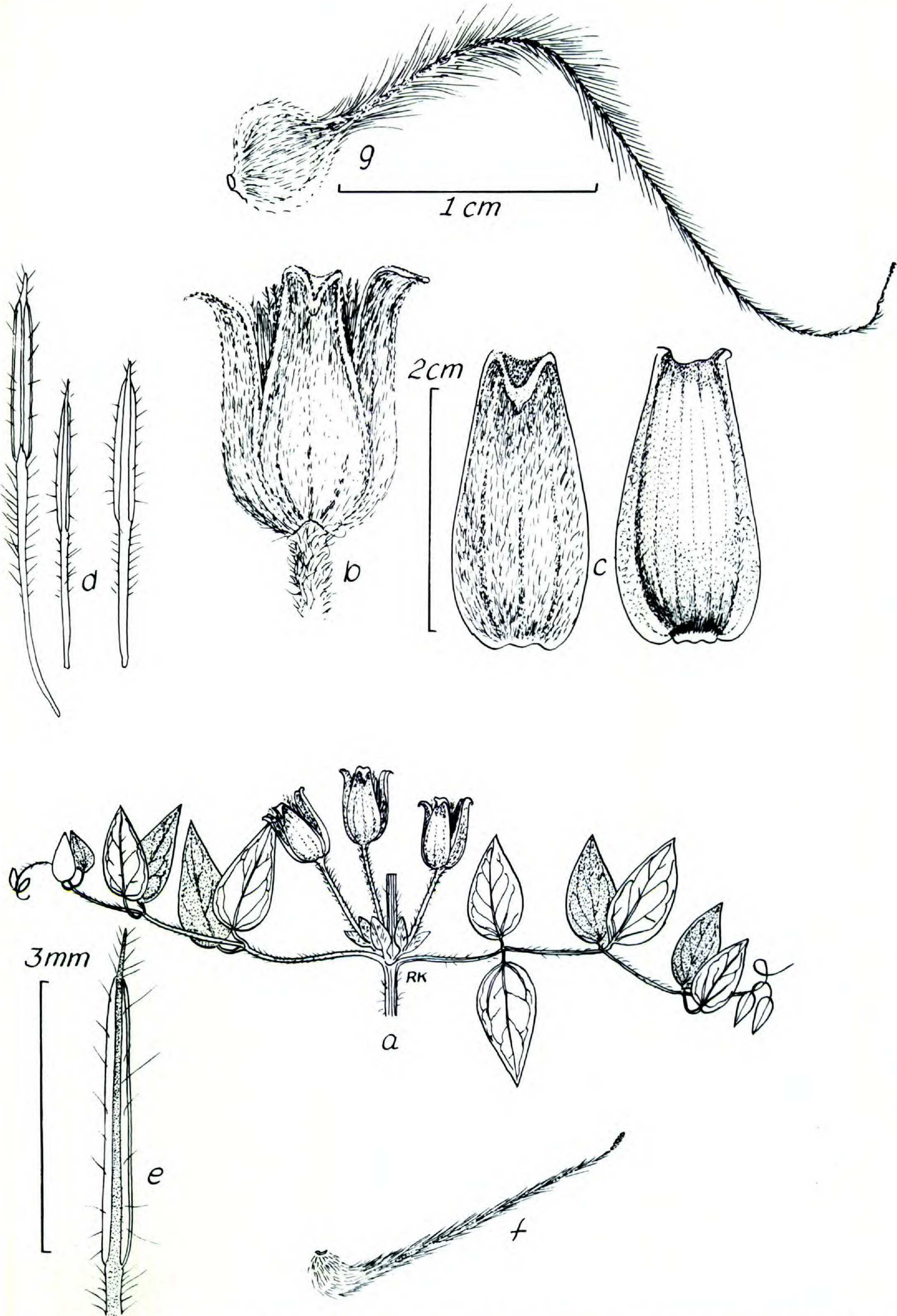


FIGURE 2. *Clematis morefieldii*.—a. Upper flowering node.—b. Flower.—c. Dorsal (left) and ventral (right) sides of sepal.—d. Three stamens.—e. Anther, enlarged.—f. Carpel.—g. Fruit with long persistent style. (Drawn from Kral 73540.)

side of eastward dirt extension of Deborah Avenue, 0.65 mi. SSW of Round Top Mtn., margin of mixed woods on rocky limestone slope, locally common, elev. 920 ft., 31 May 1982, J. D. Morefield 629 [JDM (Morefield Herbarium), VDB]; vine of loam pockets in juniper-*Cotinus*-mixed hardwood, rather dry area, upper end of Drake Avenue, W face of mountain at E side of Huntsville; calyx pinkish, 17 June 1983, R. Kral 70216 (VDB, and to be distributed).

This *viorna*, so far found only in the limestone uplands around Huntsville, Alabama, is closely related to the variable *Clematis viorna* L. Dr. Carl S. Keener (1975: 45), an authority on the genus, considers such variants as *C. gattingeri* Small, *C. flaccida* Small, and *C. beadleii* (Small) Erickson as part of that species, an opinion supported by the biosystematic study of the complex by Dr. W. M. Dennis (1976). However, Keener suggested (loc. cit.), "Nevertheless, critical population studies of *C. viorna*, especially in central Tennessee and adjacent Kentucky, would be instructive and might reveal more precise taxonomically definable topogamodemes."

It seems that this species, nested well inside an area of much of the diversity in *C. viorna*, is indeed distinctive. Of particular interest is the character combination of villous and arachnoid tomentum on the shoot, velvety lower leaflet surface, and stouter, usually shorter, peduncles which bear bracts only at the very base (this of particular significance as a character state in the *viornas*). The inflorescence is curious, the lower flowering nodes often producing sessile dichasia in the axils, or the bracteoles of these dichasia supporting more flower buds in their axils. The upper nodes are unifoliar and frequently display a wandlike length of progressively reduced leaves with the flowers paired in the axils, while the ultimate and penultimate nodes are often single-flowered; thus the overall effect is one of a narrow raceme with well-spaced nodes.

The plants are found in consistent habitat, namely the limestone measures that outcrop below the sandstone caprock of the Huntsville Mountain chain of the Cumberland Plateau which borders the Highland Rim on the east side of Huntsville. The vines root in a basic clay-loam amongst boulders of massive limestone, often sprawling over the rock itself. The forest type is an open to dense mixture of *Juniperus* with hardwoods typical of basic substrate, the more dominant being *Carya carolinae-septentrionalis*, *C. ovata*, *Quercus shumardii*, *Q. muehlenbergii*, *Q. alba*, *Q. stellata*, *Ulmus*, *Celtis*, *Acer saccharum*, and *Fraxinus americana*. However, the most no-

table indicator is the Smoketree, *Cotinus obovatus*. The shrub layer is marked particularly by *Rhus aromatica*, *Symphoricarpos*, *Hypericum frondosum*, *Forestiera ligustrina*, and *Viburnum rufidulum*. Associated and prevalent herbaceous markers include *Anemone virginiana*, *Delphinium carolinianum*, *Euphorbia corollata* (var.), *Tragia urticifolia*, *Hypericum sphaerocarpon*, *Zizia aptera*, *Thaspium pinnatifidum*, *Spigelia marilandica*, *Scutellaria ovata*, *Pycnanthemum incanum* (complex), *Blephilia hirsuta*, *Dasystoma macrophylla*, *Hedyotis purpurea*, and many composites—particularly *Aster*, *Solidago*, and the handsome white-liguled *Polymnia canadensis* var. *ligulata*. Most notable here are, however, *Silphium brachiatum* and *Solidago auriculata*, these always in close association with *Cotinus* and the new *Clematis*. The only other *Clematis* so far found in the same area is *C. virginiana*, which is part of a different section. Plants of this entire assemblage grow well on the clays and cherts derived from surrounding limestones and are markedly and abruptly different from the associations of the overlying shales and sandstones of this region.

Further field exploration of the same geologic and floristic system is being conducted with an eye toward occurrence of the *Cotinus* association, this now known to extend north into Franklin and Marion counties in Tennessee and south into Morgan County in Alabama. Where this tree occurs there is likely habitat for *Clematis morefieldii*.

Mr. J. D. Morefield, a careful and perceptive student of botany, is gratefully acknowledged. During the few years of his adult residence in Huntsville he developed an excellent personal herbarium which adds much to our information about the flora of northern Alabama, his *Clematis* being but one of many interesting discoveries. Today he is a graduate resident at the Rancho Santa Ana Botanic Garden and is involved in revisional and floristic studies centering in the Basin and Range physiography. The *Clematis* is therefore named in his honor and as a reminder that he is missed back east.

#### LITERATURE CITED

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